

Application No.10/626,307
Amendment dated 21 November 2005
Reply to Office action of September 6, 2005

REMARKS/ARGUMENTS

Claims 2, 3 and 8 have been deleted without prejudice.

The Examiner is respectfully requested to reconsider the rejection of the Claims in view of the cited references. The crux of the present invention resides in the making of the unique industrial filter materials having evenly distributed interstice openings all substantially equal in size. The filter materials are particular useful for filtering mechanical and hydraulic oils, gas and air, and fuel such as diesel fuel. As fully discussed in the disclosure, the even distributed interstice openings of equal size is particularly advantageous for preventing pollutant particles from passing through the material and they are retained at the filter surface which may be cleaned easily by flushing with water such that the filter may be re-used repeatedly. The main ingredient in all the compositions is the ultra high molecular weight (UHMW) polyethylene and the other additional supplementary materials are used to increase the flexibility of the filter material rather than as binders.

UHMW polyethylene powder will transform into a latex state at its effective melting point temperature of about 180 °C. The fused powder becomes very soft but it will not flow. A micro creep deformation occurs between the molecules of the powder such that they will change into ball shaped particles adhering to one another to become an open porous material. The soda and sodium chloride are not serving as binders in the composition. These materials in the selected even particulate sizes are to provide even distance spacers between the ball shaped particles of UHMW polyethylene. These spacer material will dissolve quickly in the water when

Application No.10/626,307
Amendment dated 21 November 2005
Reply to Office action of September 6, 2005

the fused UHMW polyethylene is immersed in the water to form the even sized openings between the surfaces of the filter materials.

On the other hand, the devices shown in the cited references are intended for filtering water, particularly drinking water. The main ingredient in these devices is the active carbon which is retained in place in the binder material including some UHMW polyethylene, but the composition will result in a filter material having tortuous paths between the two sides of the filter. The tortuous paths provide sufficient time for the active carbon to absorb the contaminants such as chlorine, lead and organic pollutants in the water. Such filter material is not suitable for filtering mechanical or hydraulic oils, gas and air, and fuel; as it would become clogged up readily by the pollutants and it may not be cleaned for re-use. Clearly, the cited references, either individually or in combination, have not suggested or inferred the advantageous compositions of the present invention. Therefore, the present invention is clearly not obvious to any one skilled in the art in view of the cited references.

Furthermore, the fabrication process of the filter materials of the present invention is entirely different from those shown in the cited references. The compositions in the cited references require mixing with water prior to the sintering process and the mixture must be injected into the mold under pressure whereas the compositions of the present invention are mixture of dry powder form which are mixed evenly by vibration only and then simply poured into the sintering mold to be heated at a sintering temperature of up to 320 °C for 30 to 90 minutes. The sintering temperature of the mixture of the cited references is around 200 °C or

Application No.10/626,307
Amendment dated 21 November 2005
Reply to Office action of September 6, 2005

lower which is entirely not suitable for fabricating the materials of the present invention.

Therefore, the fabrication process of the present invention is also not suggested or inferred in any way by the cited references.

Claims 2, 3 and 8 directed to the compositions of the water filter material have been deleted.

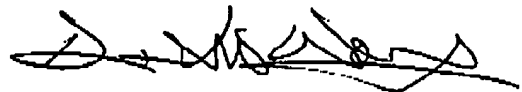
Claim 1 has been amended to define the present invention more specifically for containing mainly of the UHMW polyethylene powder particulate together with the small portion in volume in proportion of low density and high density polyethylenes.

Claims 4 to 6 have been amended to depend on Claim 1 and to define the novel compositions more specifically.

Claim 9 has been amended to include the subject matter in the deleted Claim 8.

It is respectfully submitted that the new claims are distinguishable over the cited references as expounded above. Favorable consideration and early allowance of the application are therefore respectfully requested.

Respectfully submitted,



David W. Wong
Agent For the Applicants
Reg. No. 26,408
Tel. No. 905-764-6388
Fax No. 905-764-8048